

(12) AUSTRALIAN PATENT ABRIDGMENT

(19) AU

(11) AU-B-51846/79

5 3 2 2 8 6

(54) PRINTED LIGHTNING PROTECTOR FOR ELECTRIC FENCE

(75) RICHARD LAUBE

(21) 51846/79

532286

(22) 16.10.79

(24) 21.6.76

(43) 20.3.80

(44) 22.9.83

(51)2 H01T 3/00 H02H 1/04

(62) 26120/77

(57) Claim

Claim 1. A lightning protection device comprising on etched printed circuit board having two spaced etched conductive tracks with longitudinally aligned end extends defining spaced electrodes, the free ends of the end extends being saw-tooth shaped with their teeth oppositely aligned to define a series of predetermined gaps therebetween.

Claim 2. A lightning protection device as claimed in Claim 1 and connected to protect equipment, substantially as described with reference to figure 1.

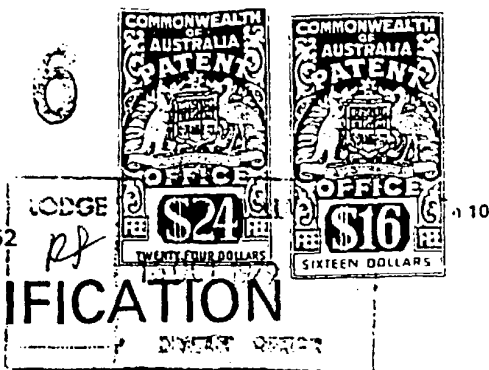


PATENTS ACT 1952

# COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE



Short Title:

Int. Cl.:

Application Number: 51846/79  
Lodged:

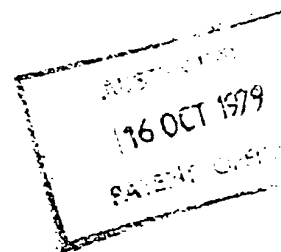
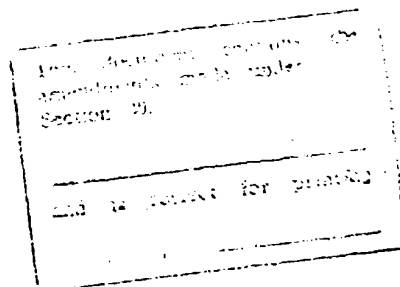


Complete Specification—Lodged:  
Accepted:  
Lapsed:  
Published:

Priority:



Related Art:



## TO BE COMPLETED BY APPLICANT



Name of Applicant: RICHARD LAUBE



Address of Applicant: 107 Pyrmont Street, Sydney, N.S.W. 2009



Actual Inventor: Richard Laube

Address for Service: 107 Pyrmont Street, Sydney, N.S.W. 2009

Complete Specification for the invention entitled: Printed or Etched Lightning Protector

The following statement is a full description of this invention, including the best method of performing it known to me:—

\* Note: The description is to be typed in double spacing, pica type face, in an area not exceeding 250 mm in depth and 160 mm in width, on tough white paper of good quality and it is to be inserted inside this form.

This invention relates to printed lightning protectors and particularly to the manner of manufacture of such protectors.

Many electric or electronic devices are connected to electrical lines exposed over long distances to strikes of static electricity. High voltage strikes of static electricity can be carried by such lines to the connected devices. This can cause subsequent damage or destruction of the devices. One such example could be an electric fence energiser connected to fence line.

Some attempts have been made to minimise damage by use of specially fabricated metallic lightning protectors. The conventional protectors are composed of two sets of sharpened conductors: one connected to electrical line, the other to earth. Such protectors are placed electrically between the protected equipment and electrical lines exposed to strikes of static electricity. The effectiveness of conventional protectors is often impaired by their mechanical deficiencies. The distance or gap between prongs of the protector is critical and must be precisely maintained to make the protector effective: too small a distance can cause nuisance, unwanted voltage breakdowns; too large a gap can render the protector ineffective. Very sharp and mechanically consistent pointed conductors are also important to the performance of a lightning protector. Many of the lightning protectors manufactured in a conventional manner do not satisfy these conditions.

The object of this invention is a lightning protector constructed in a novel manner by means of etched conductive tracks *laminated board as used in printed circuit technology* on ~~printed circuits~~ boards.

Such etched lightning protector can be incorporated in the design of a printed circuit board of a particular apparatus. It can be formed "in situ" or on a separate printed circuit board.

The etched lightning protector differs from devices previously known by means for producing it and represents a new departure in the technique of producing said devices.

The new manner of manufacture assures very precise shape of the protector and very precise and consistent spacing of the prongs.

Fig.1 illustrates the printed lightning protector in actual application. The etched protector, in the center, is electrically connected to or incorporated within the protected equipment. The line which is exposed to lightning strikes can be of any nature. Earthing is accomplished in a conventional manner.

It should be emphasized that in the conventional printed circuit technology all electrical conduction is carried along the etched conductive tracks. In this invention, the conductive tracks perform only an auxiliary function. The actual discharge of static electricity is taking place outside of the conventional tracks, and more precisely, between the printed prongs of the lightning protector.

The claims defining the invention are as follows:\*

Claim 1. A lightning protection device comprising on etched printed circuit board having two spaced etched conductive tracks with longitudinally aligned end extends defining spaced electrodes, the free ends of the end extends being saw-tooth shaped with their teeth oppositely aligned to define a series of predetermined gaps therebetween.

Claim 2. A lightning protection device as claimed in Claim 1 and connected to protect equipment, substantially as described with reference to figure 1.

Dated this 19th day of July, 1983

RICHARD LAUB  
NAME OF APPLICANT  
(BLOCK LETTERS)

\* Note: If there is insufficient space above to type the statement of claim, do not use this sheet, but use separate sheets of paper beginning with the words "The claims defining the invention are as follows:" and ending with the date and the name of the applicant in block letters.

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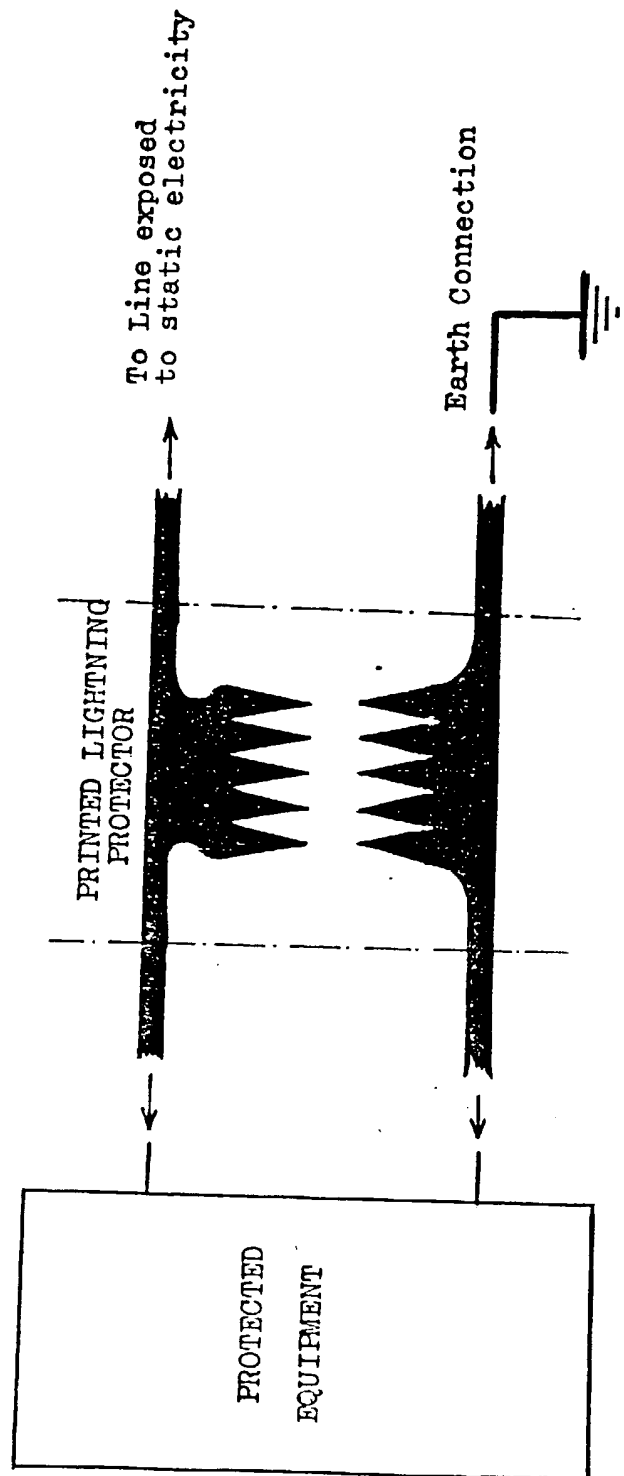


Fig. 1